

## **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

1. (Currently Amended) A method of measuring renal extraction fraction (EF) ~~function~~ in a living subject using computed tomography comprising the steps of:
  - a) obtaining a CT number ( $CT_{PRE}$ ) of arterial blood prior to addition of a radiographic contrast agent to the blood,
  - b) providing a radiographic contrast agent to the blood,
  - c) obtaining a CT number ( $CT_A$ ) of arterial blood after addition of the radiographic contrast agent to the blood,
  - d) obtaining a CT number ( $CT_V$ ) of blood in a renal vein after addition of the agent to the blood, and
  - e) determining renal extraction fraction (EF) ~~function~~ from the obtained CT numbers.
2. (Canceled)
3. (Currently Amended) The method as defined by claim 1 ~~[[2]]~~ wherein renal extraction fraction (EF) is given by:
$$EF = \frac{CT_A - CT_V}{CT_A - CT_{PRE}}$$
4. (Original) The method as defined by claim 3 wherein step b) includes providing iohexol.
5. (Original) The method as defined by claim 3 wherein step b) includes providing iothalamate.
6. (Original) The method as defined by claim 3 wherein step b) includes providing gadolinium-DTPA.
7. (Original) The method as defined by claim 1 wherein step b) includes providing iohexol.
8. (Original) The method as defined by claim 1 wherein step b) includes providing iothalamate.

9. (Original) The method as defined by claim 1 wherein step b) includes providing gadolinium-DTPA.

10. (Previously Presented) A method of determining renal extraction fraction (EF) for a kidney in a living subject, using a computed tomography (CT) apparatus comprising the steps of:

- a) obtaining a measure of x-ray transmission through arterial blood prior to addition of a radiographic contrast agent to the blood, using the CT apparatus,
- b) providing a radiographic contrast agent to the blood,
- c) obtaining a measure of x-ray transmission through arterial blood after addition of the radiographic contrast agent to the blood, using the CT apparatus,
- d) obtaining a measure of x-ray transmission through renal vein blood after addition of the radiographic contrast agent to the blood, and
- e) determining renal extraction fraction from the measures of x-ray transmission in steps a), and c), and d).

11. (Original) The method as defined by claim 10 wherein the measures of x-ray transmission are obtained using computed tomography (CT).

12. (Original) The method as defined by claim 11 wherein the measures of x-ray transmission are CT numbers.

13. (Original) The method as defined by claim 11 wherein the radiographic contrast agent is selected from the group consisting of iohexol, iothalamate, and gadolinium-DTPA.

14. (Original) The method as defined by claim 10 wherein the radiographic contrast agent is selected from the group consisting of iohexol and iothalamate.

15. (Previously Presented) The method as defined by claim 1 wherein the CT numbers ( $CT_{PRE}$ ,  $CT_A$ ,  $CT_V$ ) are each calculated as a mean value of measured image intensities for a plurality of voxels at different locations in one or more axial CT scans.

16. (Previously Presented) The method as defined by claim 15 wherein the CT number ( $CT_V$ ) of venous blood is calculated using voxels selected in a venous region to exclude arterial regions.

17. (Previously Presented) The method as defined by claim 15 wherein the renal function is calculated based on a difference between CT numbers.